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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,022	03/23/2004	Michael J. Walk	P18288	2250
28062	7590	05/05/2006	EXAMINER	
BUCKLEY, MASCHOFF, TALWALKAR LLC			CLARK, JASMINE JHIHAN B	
5 ELM STREET			ART UNIT	PAPER NUMBER
NEW CANAAN, CT 06840			2815	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/807,022

Applicant(s)

WALK, MICHAEL J.

Examiner

Jasmine J. Clark

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 112***

1. Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, lines 2-3, the recitation a second pre-formed portion of underfill material coupled to the portion of underfill material.." is unclear. Is it coupled to the pre-formed portion of underfill as claimed in claim 1?

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Song, GH (KR 2003-437159).

Song discloses in abstract and figures 2a-3c, the following: an apparatus comprising: an underfill tape 120 which serves as a pre-formed portion of underfill material defining openings 117 to pass electrical interconnects 112 and 118 formed on a portion of a substrate 114, wherein the electrical interconnects are to couple an integrated circuit die 110 to the portion of the substrate 114.

Concerning claims 5-8, an apparatus according to claims 1, 5 and 7, further comprising the portion of the substrate 114 and the integrated circuit die 110, please see the above discussion.

Concerning claim 8, an apparatus according to claim 1, the underfill tape 120 is a no-flow underfill material.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song, GH (KR 2003-437159).

As discussed above Song shows one pre-formed portion. Nonetheless Song does not literally shows having a second pre-formed portion of underfill material and a second integrated die. Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a second pre-formed portion of underfill material coupled to the pre-formed portion of underfill, whereas the second pre-formed portion of underfill defining second openings, so that the second openings to pass second electrical interconnects formed on a second portion of the substrate, wherein the second electrical interconnects are to couple a second integrated die as claimed, since it has been held that mere duplication of the essential working parts of a

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device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

4. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference as applied to claims 1-8 above, and further in view of Kooi et al. (US 2005/0082650 A1).

As discussed above Song discloses including the pre-formed portion of underfill material and other elements (see the above discussion), but fails to disclose including a microprocessor and a double data rate memory which is coupled to the microprocessor.

Kooi discloses in [036] and [0037] and Fig. 12, a system comprising a microprocessor and a double data rate memory coupled to the microprocessor. It would have been obvious to utilize the system having microprocessor and the data rate memory which is connected to the microprocessor in a semiconductor device environment, as is notoriously known.

Concerning claim 15, a system according to claim 14, the underfill tape 120 is no-flow underfill material, please see the discussion in claim 8.

Concerning claim 16, Fig. 3b shows a first plurality of electrical contacts 116, and the electrical interconnects 112 coupling the first of electrical contacts to the substrate 114.

***The reference Cited***

5. Danvir et al. (US 6,821,878 B2) disclose relating to pre applied underfill material.

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6. Applicant's amendment and arguments with respect to claims 1-8, and 14-16 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### ***Telephone Inquiry Contacts***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/04/28/06

**JASMINE CLARK**  
**PRIMARY EXAMINER**

A handwritten signature in cursive script, appearing to read "Jasmine Clark", is written over the printed name and title.